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Summary: HB 4715 and 4716 provide unwarranted preferential treatment of solar energy systems by, among other things, working to promote “robust community solar facility development.” Specifically, these bills promote the construction of community solar facilities and require monopoly utilities to offer bill credits to customers who are subscribers to a community solar facility and specifically encourage participation of low-income households and service organizations.

Highlights

- These bills put government in the position of picking winners and losers by actively promoting the “robust development” of a heavily tax-subsidized energy source.
- Solar makes little sense in Michigan as NREL.gov reports the state receives some of the worst overall solar irradiance levels in the nation and the EIA reports that solar has an average capacity factor of only 16.3%, In December and January, solar’s capacity factors in Michigan drop to as low as 7%.
- Relying on weather-dependent energy sources puts Michigan in a situation similar to that of California and Texas, which are both experiencing statewide blackouts.
- Solar panels create 300 times more waste than nuclear plants on a per unit of energy produced measure.

Background/Problem:

While solar is often lauded by utilities, media, and green groups as a green and affordable energy source, there is a need for better balancing information about solar’s performance and its overall environmental impacts in the state of Michigan.

Compared to reliable options like nuclear energy or natural gas, solar is an unreliable / weather-dependent, relatively environmentally harmful, and expensive energy resource that relies on generous tax credits and subsidies to make it financially viable. Worse, solar’s intermittent and unreliable performance means that backing power sources, like natural gas and nuclear, are still required to be built to ensure customers have reliable energy. Therefore, utility customers are required to pay for the construction of both forms of energy.

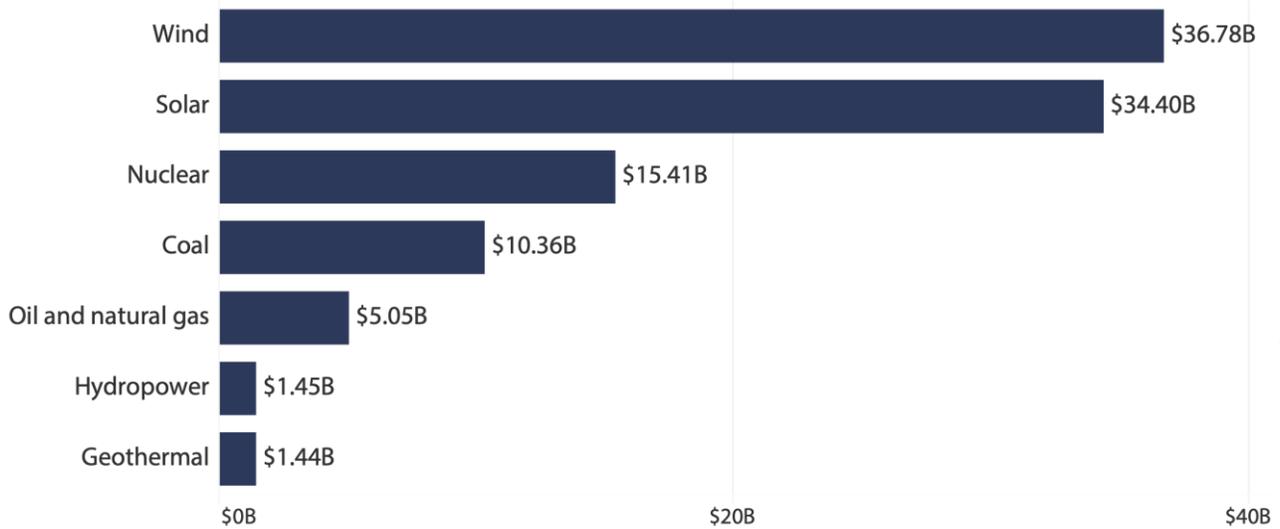
By actively promoting the widespread development of community solar installations, these bills put government in the position of selecting winners and losers in Michigan’s energy markets.

Solar only “competes” because of generous tax provisions

HB 4715 and HB 4716 put government in the position of promoting a specific energy source, effectively choosing winners and losers. However, solar would struggle to compete with other energy sources if it weren’t for generous tax provisions like the federal Intermittent Tax Credit and state level mandates. The Texas Public Policy Foundation reviewed federal energy

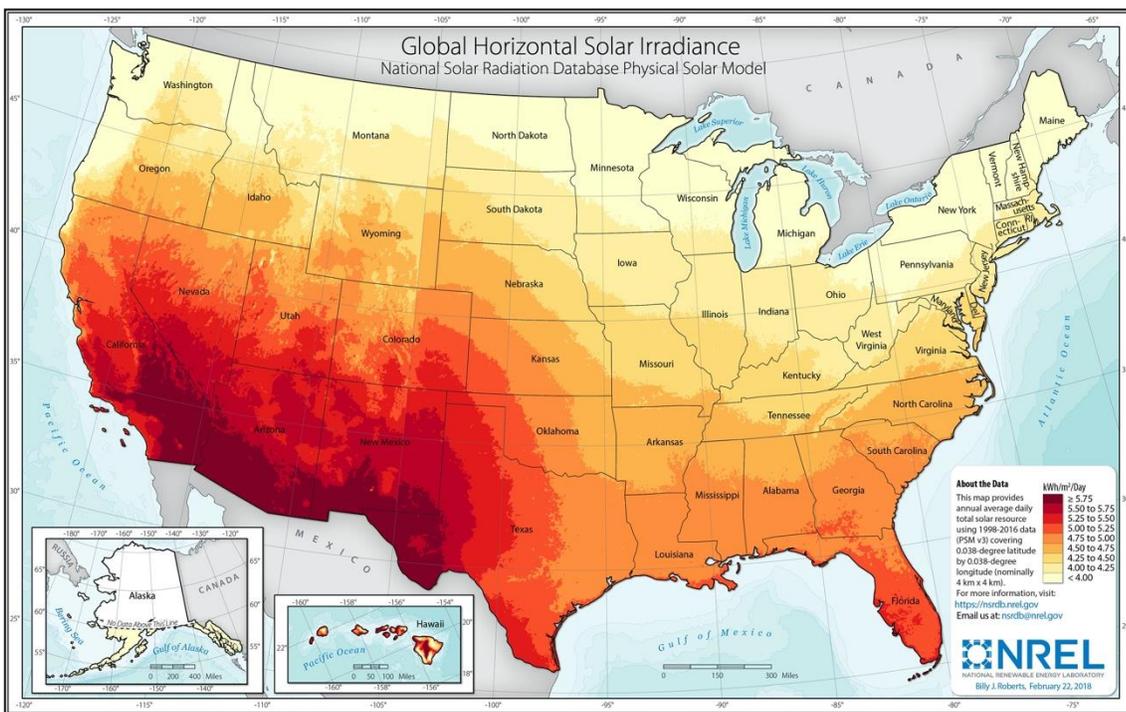
subsidies from 2010 to 2019.¹ Solar energy received 75 times more in subsidies than the average for fossil and nuclear sources per unit of energy generated.

Figure 3. Total federal subsidies for electricity generation, 2010 to 2019 (billions of 2019 USD)



Michigan is the wrong state to rely on solar

The National Renewable Energy Laboratories “Global Horizontal Solar Irradiance” maps and data indicate solar receives some of the lowest solar irradiance levels in the lower 48 states.²



Energy Information Administration data further supports the notion that Michigan is not the right state for solar development as solar installations in the state have an average capacity factor of

¹ Texas Public Policy Foundation, **The Siren Song that Never Ends: Federal Energy Subsidies and Support from 2010 to 2019**, July 2020, <https://lifepowered.org/wp-content/uploads/2020/07/2020-04-RR-Bennett-LP-Federal-Energy-Subsidies-2.pdf>.

² Sengupta, M., Y. Xie, A. Lopez, A. Habte, G. Maclaurin, and J. Shelby. 2018. "The National Solar Radiation Data Base (NSRDB)." *Renewable and Sustainable Energy Reviews* 89 (June): 51-60. <https://www.nrel.gov/gis/solar-resource-maps.html>.

16.3%. Capacity factors for solar in Michigan drop to as low as 6.8% in December and 7.2% in January, which means that reliable energy sources must provide electricity 83% of the time.³

Grid stability suffers with weather-dependent renewables

While Michigan's relatively low levels of renewable energy have allowed it to avoid the full impacts of relying on weather-dependent energy resources, other states that are further ahead in their transition to solar or wind are feeling those effects. States like Texas, which has massively expanded its wind resources, and California, which relies heavily on solar, are seeing growing instability in their increasingly fragile electric grids.

In February Texas endured the effects of an unusual, but not unprecedented winter storm. The state's electricity grid was stretched beyond its limits and failed badly. The state's decade-long program of prioritizing spending on renewable energy over reliable sources, planning and winterization left its grid fragile and unable to respond to sudden changes in energy demand.⁴

California's program of shuttering reliable energy sources and building out its solar resources have left the state's grid incapable of handling normal summer electricity demands. For the past three summers, the state has been forced to impose rolling blackouts and conservation measures. In September 2021, the state was forced to admit its plan had failed. California's state energy regulator, CAISO, filed a request with the Department of Energy to pause the enforcement of federal regulations and allow the state to temporarily reopen several natural gas plants to "preserve the reliability of bulk electric power system in California."⁵

Continuing to build out renewable energy sources across the state of Michigan, whether community solar installations or via the long-term plans of the state's monopoly utilities, will mimic the costs and grid stability impacts being seen in Texas and California.

Renewables are not environmentally benign

Research by the California-based environmental group, Environmental Progress indicates that the production of solar panels produces 300 times more toxic waste, per unit of energy produced, than nuclear power. The study defines "toxic waste" as spent fuel and assemblies from nuclear plants, and the solar panels that are decommissioned and landfilled.⁶

Alternative Solution:

While legislator's desire to improve the affordability of electricity, especially for low-income communities, is laudable, policymakers should not put themselves in the place of actively promoting one energy source over others. This is especially true when the source they are promoting has a broad mix of economic, environmental, and reliability challenges that it must overcome.

³ U.S. Energy Information Administration, Michigan Electricity Profile Full Data Tables 2019, <https://www.eia.gov/electricity/state/Michigan/>.

⁴ Hayes, J. Texas blackouts warning to Biden and all of us: Renewables do play a role in grid problems, USA Today, February 22, 2021. <https://www.usatoday.com/story/opinion/2021/02/22/renewable-energy-part-cause-texas-blackouts-column/6772677002/>.

⁵ California Independent System Operator Corporation, Request for Emergency Order Pursuant to Section 202(c) of the Federal Power Act, September 7, 2021. <http://www.caiso.com/Documents/Sep7-2021-Request-Department-Energy-EmergencyOrder-Section202c-FederalPowerAct.pdf>.

⁶ Environmental Progress, Are we headed for a solar waste crisis? June 21, 2017. <https://environmentalprogress.org/big-news/2017/6/21/are-we-headed-for-a-solar-waste-crisis>.